

REMARKS

Claims 1-13 are pending in the application.

Claims 1-13 were rejected.

New claim 14 is added.

I. 35 U.S.C. §103 Claim Rejections

In the Office Action, claims 1-13 were rejected under 35 U.S.C. §103(a) as being unpatentable over Fong *et al.* (US. Patent No. 6,493,328) in view of Abrol *et al.* (US. Patent No. 6,542,734). Applicants respectfully traverse this rejection and request reconsideration by the Examiner.

The invention is directed to a method for providing connectivity for a mobile unit in a wireless communication system with data network interfaces provided in at least two service areas of the wireless system. In a preferred embodiment of the invention, the multi-point connectivity provided according to the method of the invention enables the maintenance of a substantially continuous connection between the mobile unit and data network interfaces associated with each of the at least two service areas, as the mobile unit moves between a primary coverage area of a first service area and a primary coverage area of a second service area.

As taught by the Applicants, in wireless systems of the art, an interface may be provided between individual service areas of the wireless system and a data network, which interface is often implemented in a Packet Data Serving Node (PDSN). It is a characteristic of such data interface arrangements that the network controlling element (*e.g.*, a BSC) for each service area is interfaced to a separate PDSN. Applicants further pointed out that a limitation of the current art is that, for a given MN, only one access connection (*i.e.* one PDSN connection) to a data network is permitted at a time. Thus, as an MN using a data connection

moves from one service area to another, a momentary break in the communications path occurs as the MN terminates its link with an initial service area network controlling element and goes through the “handshaking” procedure necessary to establish a connection with the data interface for the network controlling element in the service area to which the MN is moving. This inevitably results in some data loss for the MN.

The invention provides a solution to the problem of data loss occurring at such a transfer of the data communications link from a first to a second wireless service area, and does so using the existing MN architecture and consistent with current standards. In particular, the Applicants recognized that an MN can maintain plural communication paths using the Radio Link Protocol (RLP), and that this capability can be advantageously applied to provide data connectivity from an MN to multiple service areas. Using that RLP capability, the Applicants devised a new network interface that can be implemented at a service-area network controlling element to permit the MN to maintain separate RLP instances (channels) with (1) network controlling element for the service-area to which the MN is moving and (2) with the network controlling element in the initial service area. Thus, with the network interface of the invention, the MN is thereby able to maintain simultaneous connections with both the PDSN associated with the initial service area and with the PDSN for the service area to which it is moving.

Specifically, as an MN moves into radio contact with a new service area, it establishes plural communications channels with the network controlling element of the new service area. At least one of the plural channels is established, via the new network controlling element, with the PDSN of the new service area for registration with that PDSN, and ultimately for data transmission via that PDSN. At the same time, another of the plural channels is established, as

a combination of the link between the MN and the new network controlling element and an inter-service-area communications channel between the new network controlling element and the network controlling element for the initial service area. Accordingly, the MN is connected with the network controlling element of the initial service area, and ultimately with the PDSN associated with that initial network controlling element, via this alternate channel, during the time that registration with the new PDSN is being effected via the channel established with that new PDSN.

In other words, while the MN negotiates registration and initialization procedures with the PDSN of the new service area (via the channel established with the new PDSN), its data communications stream is maintained with the original PDSN via the separate communications channel established back to the initial network controlling element and associated PDSN. Once the registration and initialization procedures have been completed with the new PDSN, and a data communication channel established from the MN to the new PDSN (via the network controlling element of the new service area), the data communications channel established via the new network controlling element back to the original network controlling element is terminated.

It can thus be seen that the invention provides simultaneous connectivity for an MN to multiple network controlling elements and thereby permits the MN to maintain a temporary continuing data communications path with an original PDSN after having moved into a new service area associated with another PDSN. Accordingly, the invention eliminates the data loss of the prior art during the time required for registration with the PDSN associated with a new service area.

Applicants showed in their response to the prior Office Action that the primary reference cited against their claims, Fong, plainly does not teach the novel features of the invention. In that regard, Applicants again note their disagreement with the characterization of their position regarding Fong in the current Office Action – “that Fong’s system is similar” to their invention. Although Applicants noted in their prior responses that Fong is generally concerned with the provision of a data connection between a mobile node in a wireless system and a server in a data network, that comment was made in the context of a following statement that such was the only point of similarity between the teaching of Fong and their invention.

While Fong discloses an interface between a base station controller of a service area and a PDSN, as associated with an implementation of a wireless data channel, and, indeed, includes a general discussion of the Radio Link Protocol (RLP), nothing in that disclosure could reasonably be construed to show or suggest the multi-point connectivity provided for a mobile node according to the methodology of the invention here. None of the RLP discussion in Fong is related to the idea of the invention for using RLP to establish plural communications channels between a mobile node and a serving BSC. Nor, is there any suggestion in Fong for the establishment of concurrent communications paths from a mobile node to multiple service areas and PDSNs associated therewith. Indeed, the entire discussion of Fong is concerned solely with the movement of a mobile node within a single wireless service area – and access to the single PDSN associated with that single service area, along with the interface of the mobile node with various base stations operating under the control of the BSC for that single service area. Nothing in Fong can be read to suggest any concern with the movement of a mobile node from a first service area to a second service area, much less with the problem of overcoming the hard break in a data communications channel resulting from such movement.

The secondary reference, Abrol, is cited as teaching the use of RLP for establishing plural communications channels between a mobile node and a servicing BSC. The thrust of Abrol is a methodology to facilitate communications between a mobile station communication protocol stack and a mobile station application. While the teaching of Abrol includes RLP as one level in the mobile station protocol stack and arguably teaches the use of RLP for a transmission link between the mobile and a serving base station, there is no suggestion in Abrol for using the capability of RLP to provide multiple channels via a common RF link. More important, nothing in the teaching of Abrol can reasonably be construed as showing, or even suggesting the idea of providing multi-point connectivity for a mobile to multiple service areas, or the use of RLP to enable such a function.

Plainly then, Applicant respectfully suggests, nothing in the teaching of Fong or of Abrol, or any combination thereof, shows or suggests the novel feature of the invention whereby plural communication channels are established between a mobile node and a network controlling element of the service area with which it is in communication, and certainly not the use of one of those communication channels to effect a continuing link with a prior network controlling element while registration with a data serving node associated with the new network controlling element is carried out via the other communication channel. The claims presented herein, including a new independent claim directed to an aspect of the invention not previously addressed in the claims, are believed to reflect this novel aspect of the invention and thus should be patentable over the art of record. Withdrawal of the rejection under §103 of claims 1-13 is respectfully requested.

Moreover, while Applicants believe that the cited references fail even to provide a teaching that would lead one skilled in the art to the invention here, the rejection is also devoid

of another critical factor. It is well established that a §103 obviousness rejection must include a showing of a motivation in the applied reference to use the teaching of that reference (or a combination of references) in a manner to replicate the claimed invention. The Federal Circuit's discussion of the "obviousness" standard in *In re Rouffet (id)*, is instructive in this regard.

The court stated:

Virtually all inventions are combinations of old elements [*citations omitted*]. Therefore an examiner may often find every element of a claimed invention in the prior art. If identification of each claimed element in the prior art were sufficient to negate patentability, very few patents would ever issue. Furthermore, rejecting patents solely by finding prior art corollaries for the claimed elements would permit an examiner to use the claimed invention itself as a blueprint for piecing together elements in the prior art to defeat the patentability of the claimed invention. Such an approach would be an illogical and inappropriate process by which to determine patentability.

To prevent the use of hindsight based on the invention to defeat patentability of the invention, this court requires the examiner to show a motivation to combine the references that create the case of obviousness. In other words, the examiner must show reasons that the skilled artisan, confronted with the same problems as the inventor and with no knowledge of the claimed invention, would select the elements from the cited prior art references for combination in the manner claimed.

Simply put, there is no teaching in the Abrol reference that could be read to suggest a modification of a single-service-area arrangement of Fong to enable a mobile node to maintain continuing connectivity with a data network as it moved from such a service area to another service area interfaced to a separate data network interface. Accordingly, Applicants respectfully submit one skilled in the art would have found no motivation for combining those

references in the manner suggested by the Office Action, and thus that the §103 rejection must fail on this basis as well.

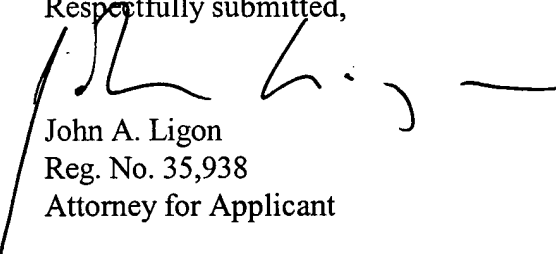
II. Conclusion

Having fully addressed the Examiner's rejection bases herein, it is believed that, in view of the preceding amendments and remarks, this application now stands in condition for allowance. Such allowance is respectfully requested.

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Please charge any fees due in respect to this amendment to Deposit Account No. 50-1944.

Respectfully submitted,


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I hereby certify that this Response to Office Action is being deposited with the United States Postal Service as First Class Mail, postage prepaid, in an envelope addressed to the Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313 on December 3, 2004.

By: 

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